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Professor Osborn has shown that grass insects destroy much produce. He estimates that the small leaf-hoppers (*Jassidae*) destroy as much food from two acres of pasture as would feed one head of stock. From recent experiments he has found that it is possible by the use of hopperdozers to reduce the numbers of these insects so materially that, upon two plots chosen for their similarity of the conditions of the growth, the amount of hay produced upon a plot which was once treated with the hopperdozer was 34 per cent greater than upon the corresponding untreated plot.

VIRCHOW, THE MAN AND THE STUDENT.¹

By his commission the physician is sent to the sick, and, knowing in his calling neither Jew nor Gentile, bond or free, perhaps he alone rises superior to those differences which separate and make us dwell apart, too often oblivious to the common hopes and common frailties which should bind us together as a race. In his professional relations, though divided by national lines, there remains the feeling that he belongs to a Guild which owes no local allegiance, which has neither king nor country, but whose work is in the world. The *Aesculapian* temple has given place to the hospital, and the priestly character of the physician has vanished with the ages; still there is left with us a strong feeling of brotherhood, a sense of unity, which the limitations of language, race, and country have not been able to efface. So it has seemed meet and right to gather here this evening to do honor to a man — not of this country, not of our blood — whose life has been spent in the highest interests of humanity, whose special work has revolutionized the science of medicine, whose genius has shed lustre upon our craft.

The century now drawing to a close has seen the realization of much that the wise of old longed for, much of which the earnest spirits of the past had dreamt. It has been a century of release — a time of the loosening of bands and bonds; and medicine, too, after a long enslavement, ecclesiastical and philosophical, received its emancipation. Forsaking the traditions of the elders, and scouting the Shibboleth of schools and sects, she has at last put off the garments of her pride, and with the reed of humility in her hand sits at the feet of her mistress, the new science. Not to any one man can this revolution be ascribed; the *Zeit-geist* was potent, and like a leaven worked even in unwilling minds; but no physician of our time has done more to promote the change, or by his individual efforts to win his generation to accept it, than Rudolph Virchow.

And now, as the shadows lengthen, and ere the twilight deepens, it has seemed right to his many pupils and friends, the world over, to show their love by a gathering in his honor, on this his seventieth birthday. To-day, in Berlin, a *Fest* has been held, in which several hundred members of the profession in this and other countries have been participants, as subscribers to the fund which was organized for the occasion. It seemed well, also, to his pupils who are teachers in this university, and to others, that the event should be marked by a reunion at which we could tell over the story of his life, rejoice in his career, and express the gratitude which we on this side of the Atlantic feel to the great German physician.

Let me first lay before you a brief outline of his life:

Rudolph Virchow was born Oct. 13, 1821, at Schivelbein, a small town in Pomerania. Details of his family and of his childhood, which would be so interesting to us, are not available. Educated at the Gymnasium in Berlin, he left it at Easter, 1839, to begin his medical studies, and graduated from the university of that city in 1843. The following year he became assistant in pathological anatomy to Froriep; and in 1846 he was made prosector, and in 1847 a lecturer at the university. In 1849, on account of his active participation in the political events of the previous year, he was dismissed from his university positions, and, as he mentions, was only *mit grossen beschränkungen* reinstated,

¹ Address by William Osler, M.D., professor of medicine in the Johns Hopkins University, on the seventieth birthday of Professor Virchow, Oct. 13, at Baltimore.

largely, in fact, by the efforts by the profession of Berlin, and particularly of the medical societies. In August, 1849, he received a call to the chair of pathological anatomy at Wurzburg, a position which he held until 1856, when, by the unanimous vote of the faculty, he was recommended for, and received the appointment which he still holds, namely, professor of pathological anatomy at Berlin. Prior to leaving Berlin he founded, in 1847, his celebrated *Archiv*, now in its one hundred and twenty-eighth volume, which is the greatest storehouse of facts in scientific medicine possessed by us to day.

Externally, at least, an uneventful, quiet, peacable life with few changes.

As an illustration of the successful pursuit of various callings, Virchow's career is without parallel in our profession, and this many-sidedness adds greatly to the interest of his life. Dr. Welch will speak of his special labors in the science of pathology; and other aspects will be considered by Dr. Chew and Dr. Friedenwald. I propose to indicate briefly a few traits in his life as a man of science and as a citizen.

From the days of the great Stageirite, who, if he never practised medicine, was at least an asclepiad and an anatomist, the intimate relation of medicine with science, has in no way been better shown than in the long array of physicians who have become distinguished in biological studies. Until the gradual differentiation of subjects, necessitated by the rapid growth of knowledge, the physician, as a matter of course, was a naturalist; and in the present era, from Galen to Huxley, the brightest minds of the profession in all countries have turned towards science as a recreation or as a pursuit. Alas! that in the present generation, with its strong bent toward specialism, this combination seems more and more impossible. We miss now the quickening spirit and the wiser insight that come with work in a wide field; and in the great cities of this country we look in vain among practising physicians for successors of Jacob Bigelow of Boston, Holmes of Montreal, Barton of Philadelphia, and others — men who maintained in this matter an honorable tradition, whose names live in natural history societies and academies of natural science, in the founding of which they were mainly instrumental.

In anthropology and archaeology the name of Rudolph Virchow is almost as well known as it is in medicine. Very early in his work we find evidences of this bent in the memorable studies, now forty years ago, on cretins and on the development of the skull. Not a year has passed since that time without some notable contribution from him on these subjects; and those of us who know only his professional side may well marvel at the industry of the man whose name is quoted and appears in anthropological memoirs and journals as often as in our technical works. In recognition of his remarkable labors in this department, a special anthropological institute was organized in 1881, on the occasion of the twenty-fifth year of his professoriate. In 1884, on returning to Berlin for the first time since my student days, I took with me four choice examples of skulls of British Columbian Indians, knowing well how acceptable they would be. In his room at the Pathological Institute, surrounded by crania and skeletons, and directing his celebrated *diener*, who was mending Trojan pottery, I found the professor noting the peculiarities of a set of bones which he had just received from Madeira. Not the warm thanks, nor the cheerful greeting which he always had for an old student, pleased me half so much as the prompt and decisive identification of the skulls which I had brought, and his rapid sketch of the cranial characters of the North American Indian. The profound expert, not the dilettante student, has characterized all of his work in this line. Even an enumeration with a brief report of his published writings in anthropological and archaeological subjects would take more time than has been allotted to me. Of his relations with Schliemann I must say something, which I could not do so well as in the words used by his friend, Dr. Jacobi, ten years ago: "Schliemann, by whose modern witchcraft holy old Troy is just leaving its tomb, invited Virchow to aid him in his work of discovery of the buried city. He went — partly to aid, partly, as he says, to escape from overwhelming labors at home — only to be engrossed in just as hard work, though of a different nature. In regard to the latter, Schliemann's recent book on

'Illos' contains some very interesting material. But what has engaged my attention and interest most has been to observe the humanity and indefatigability displayed by the great man in the service of the poor and sick. To read of his constant, practical exertions in behalf of the miserable population of Hissarlik; how he taught the aborigines the efficacy of chamomile and juniper, which grow about them, unnoticed and unused, in rare abundance; how a spring he laid open for archaeological purposes has been called by them 'the physician's,' and is believed to have beneficial effects; how he was, on leaving the neighborhood, loaded with flowers, the only thing they had and knew would please him, has charmed me intensely. To admire a great man for his professional labors, eagerly undertaken and successfully carried out, is a great satisfaction to the scientific observer; to be able to love him, in addition, for his philanthropy and warm-heartedness, is a feast of the soul."

Virchow's life work has been the study of the processes of disease, and in the profession we revere him as the greatest master that has appeared among us since John Hunter. There is another aspect of his work which has been memorable for good to his native city. From the day when, as a young man of twenty-seven, he was sent by the Prussian Government to Upper Silesia to study the typhus epidemic, then raging among the half-starved population, he has been one of the most powerful advocates in Germany for sanitary reform; and it is not too much to say that it is largely to his efforts that the city of Berlin owes its magnificent system of drainage. His work in this department has been simply monumental, and characterized by the thoroughness which marks the specialist.

To his exhaustive monographs on camp-diseases, cholera, military medicine, and other cognate subjects, I cannot even refer.

It will be generally acknowledged that in this country doctors are, as a rule, bad citizens, taking little or no interest in civic, state, or national politics. Let me detain you a moment or two longer to tell of one of us, at least, who, in the midst of absorbing pursuits, has found time to serve his city and his country. For more than twenty years Virchow has sat in the Berlin City Council as an alderman, and to no feature in his extraordinary life does the Berliner point with more justifiable pride. It is a combination of qualities only too rare, when the learned professor can leave his laboratory and take his share in practical, municipal work. How much his colleagues have appreciated his efforts has been shown by his election as vice president of the Board; and on the occasion of the celebration in 1881, the *Rathhaus* was not only placed at the disposal of the committee, but the expenses of the decorations, etc., were met by the council; and to-day comes word by cable that he has been presented with the freedom of the city.

The years succeeding to Virchow's student days were full of strong political feeling, and with the French Revolution in 1848, came a general awakening. In Germany the struggle for representative government attracted many of the ardent spirits of our profession, and it was then that Virchow began his political career. The revolution was a failure, and brought nothing to the young prosecutor but dismissal from his public positions. His participation might have been condoned had he not issued a medico-political journal, *Die Medicinische Reform*, the numbers of which are even now very interesting reading, and contain ideas which to-day would be called liberal, but were then revolutionary. It is a striking evidence of the deep impression which even at that time Virchow had made upon his colleagues and the profession, that he was reinstated in his office at the urgent solicitation of the medical societies of the city. He relates in his "Gedächtnissrede auf Schönlein," who was the court physician and not at all in harmony with the views of his prosecutor, that on one occasion in 1848, at a post-mortem, in which the diagnosis of hemorrhage into the brain had been made by the professor, Virchow demonstrated an obstructing embolus in the artery. Schönlein turned to him in a half vexed, half-joking manner and said, "Sie sehen auch ueberall Barrikaden." His active political life dates from 1862, when he was elected to the lower house from one of the Berlin districts, and has, I believe, sat as member almost continuously from that date. The conditions in Germany have not been favor-

able to a man of advanced liberal views, and Virchow has been attached to a party which has not been conspicuously successful; but he has been an honest and industrious worker, a supporter of all measures for the relief of the people, a strenuous opponent of all class and repressive legislation, and above all an implacable enemy of absolutism as personified in Bismarck. A man of such strong individuality would make his presence felt in any assembly; and he always commanded the attention of his colleagues, and oftentimes his speeches have been reported fully both in England and in America.

As an illustration of his capacity for varied work, I recall one day in 1894, in which he gave the morning demonstration and lecture at the Pathological Institute, addressed the Town Council at great length on the extension of the canalization scheme, and made a budget speech in the House, both of which were reported at great length in the papers of the next day.

Naturally, amid such diverse occupations, it has been impossible for him to enter with his old vigor into the minutiae of pathological anatomy, and his attitude of late years has been critical rather than productive; but his interest in all that pertains to our profession is unabated, and is a feature of his character to which I must allude. Too often with us, in our gatherings and society meetings, the "men of rath and riper years" are conspicuous by their absence. In this respect our great master has set a notable example. Amid cares and worries, social and political, with a thousand and one ties and duties, he has never held aloof from his brethren; but, as the weekly medical journals testify, no man in Berlin has been more active, and for years he has held the presidency of the Berliner Medicinische Gesellschaft, one of the most important medical societies of Europe.

Surely the contemplation of a life so noble in its aims, so notable in its achievements, so varied in its pursuits, may well fill us with admiration for the man, and with pride that he is a member of our profession. The influence of his work has been deep and far-reaching, and in one way or another has been felt by each one of us. It is well to acknowledge the debt which we every-day practitioners owe to the great leaders and workers in the scientific branches of our art. We dwell too much in corners, and, consumed with the petty cares of a bread-and-butter struggle, forget that outside of our routine lie Elysian fields into which we may never have wandered, the tillage of which is not done by our hands, but the fruits of which we of the profession (and you of the public) fully and freely enjoy. The lesson which should sink deepest in our hearts is the answer which a life, such as Virchow's, gives to those who to-day, as in past generations, see only pills and potions in the profession of medicine, and who, utilizing the gains of science, fail to appreciate the dignity and the worth of the methods by which they are attained. As Pausanias pestered Empedocles, even to the end, for the details of the cure of Pantheia, so there are with us still those who, "asking not wisdom, but drugs to charm with," are impatient at the slow progress of science, forgetting that the chaos from which order is now appearing has been in great part dispelled by the work of one still living — by the man whom to night we delight to honor.

BOOK-REVIEWS.

Across Russia from the Baltic to the Danube. By CHARLES AUGUSTUS STODDARD. New York, Scribner. 8°. \$1.50.

STODDARD's journey, the story of which is told in this volume, began at Paris, and extended through Sweden and Finland, to Russia, which he entered at Cronstadt. Much time was spent at St. Petersburg, and then the journey was resumed to Moscow, to which again much attention was given. The closing chapters of the book contain the account of what the author saw, or thought, while he was at Nijni-Novgorod, or was journeying west through Warsaw, the Carpathian Mountains, and Hungary, to Budapest.

The book is the narrative of one who knows how to make the stories of his wanderings entertaining. The style is that of a conversationalist rather than of the writer. Skipping along lightly from one topic to another, the author almost seems before you armed with stereopticon views of the scenes he is describing. And